



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/588,292

01/11/2007

Akiko Yabe

294524US0PCT

5706

22850

7590

10/10/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

KOSLOW, CAROL M

ART UNIT

PAPER NUMBER

1793

NOTIFICATION DATE

DELIVERY MODE

10/10/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/588,292	<b>Applicant(s)</b> YABE ET AL.	
	<b>Examiner</b> C. Melissa Koslow	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/4/06</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

JP 2000-511586; JP 2001-214159; JP 2004-352928 and JP 2005-8872 cited in the information disclosure statement filed 4 August 2006 fail to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

The form PTO-1449 states these references are equivalent to US 6,051,929; US 6,084,250; US 6,641,933; US 2004/0079923; EP 1,641,048 and EP 1.640,429. These equivalent references have been considered in place of JP 2000-511586; JP 2001-214159; JP 2004-352928 and JP 2005-8872 and have been cited on the form PTO-892.

WO 02/091487 cited in the information disclosure statement filed 4 August 2006 has been considered with respect to their English abstracts and the listed US equivalent, which has been listed on the form PTO-892. The remaining Japanese language references cited in the information disclosure statement filed 4 August 2006 have been considered with respect to the provided English translations.

The abstract of the disclosure dated 4 August 2006 is objected to because it contains more than one paragraph and contains more than 150 words. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

Art Unit: 1793

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The drawings are objected to because it contains hand written corrections. Furthermore, reference number 18 in figure 2 is labeled as "blanket" but the specification teaches reference number 18 refers to a blaket on pages 10 and 30.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The disclosure is objected to because of the following informalities: page 30 states the light emitting device is shown in figure 3. Figure 2 shows the light emitting device and figure 3 shows the excitation spectra of Example 6 and comparative example 7. Appropriate correction is required.

Art Unit: 1793

Claims 6, 8 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Page 29 teaches that for the claimed device to emit white light, the phosphor of claim 1 must be a red phosphor and the device must further contain green and blue phosphors. Claim 6 teaches the device of claim 1, which only contains one phosphor and which does not define the color emitted by the claimed phosphor, emits white light. Furthermore, page 29 only teaches mixing the claimed phosphor with green and blue phosphors, which can be inorganic phosphors. Claim 12 teaches mixing the claimed phosphor with any inorganic phosphor, which reads upon phosphors besides green and blue phosphors. Page 30 teaches a UV shielding treatment is provided on the outside of the phosphor layer in the device of figure 2. This treatment form UV absorbing layer 14b. Claim 8 simply teaches performing a UV shielding treatments the phosphor is irradiated, but there is no indication in claims 8 and 1 what is subjected to the treatment of claim 8. These discrepancies with respect to the teachings in the claims and the specification needs to be clarified.

Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Subject matter critical or essential to the practice of the invention, but not included in the claim means the claim is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Art Unit: 1793

The green and blue phosphors and the limitation that the phosphor of claim 1 is a red phosphor which required and thus are essential to make the device of claim 1 emit white light is missing from claim 6. Thus claim 6 is not enabled.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear upon what the claimed treatment is preformed.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent application publication 2003/0106460; U.S. patent 5,006,503 or U.S. patent 3,398,009.

All three of these references teach phosphors having the claimed properties and resins contaminating these phosphors. Comparative example compound 3 and comparative example 3 teach  $\text{Eu}(\text{2NFA})_3(\text{TPPO})_2$ , which applicants teach has the claimed properties in example 8 in the specification, and polyvinyl pyrrolidone containing  $\text{Eu}(\text{2NFA})_3(\text{TPPO})_2$ . U.S. patent 5,006,503 teaches preparation 3 and example 1 teaches  $\text{Eu}(\text{TTA})_3(\text{TPPO})_2$ , which applicants teach has the claimed properties in example 1 in the specification; and a cellulose acetate butyrate binder

Art Unit: 1793

containing  $\text{Eu}(\text{TTA})_3(\text{TPPO})_2$ . U.S. patent 3,398,009 teaches  $\text{Eu}(\text{TTA})_3\text{Phen}$  and  $\text{Eu}(\text{DBM})_3\text{Phen}$ , which applicants teach has the claimed properties in examples 2 and 6 in the specification, and these compounds in a resin. The references teaches the claimed phosphor and resin composition.

Claims 1-5, 7, 10, 11 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 6,051,925.

This reference teaches a light emitting device, for use in an image display unit, comprising a LED, such as a GaN based LED, which emits light having a peak in the range of 370-410 nm and a red phosphor which is a fluorescent Eu complex, such as  $\text{Eu}(\text{ttfa})_3\text{Phen}$  or  $\text{Eu}(\text{tfnb})_3\text{DPPhen}$ , where ttfa is 1-(2-thenoyl)-4,4,4-trifluoro-1,3,1,3 butanedionate and tfnb is 4,4,4,-trifluoro-1-(2-naphthyl)-1,3-butanedione. Applicants teach these europium complexes have the claimed properties in examples 2 and 9 in the specification. The reference teaches that the phosphor can be dispersed in a resin. Column 2, lines 55-62 teaches a device comprising and LED array which emits light in the range of 370-410 nm, the claimed phosphor as the red phosphor; a green phosphor and a blue phosphor. The reference teaches the claimed device, phosphor and resin composition.

Claims 1-7, 9, 12, 11, 14 and 15 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 2004-356358 or JP 2004-352928.

Applicants admitted EP 1,641,048 is the English equivalent to JP 2004-352928 and thus EP 1,641,048 is being used as the translation for JP 2004-352928.

Both of these references teach light emitting devices, which are used in lighting systems, comprising a LED or LD, which emits light in the range of 380-470 nm and one of the phosphors

Art Unit: 1793

taught in paragraph 33 of JP 2005-356358 or paragraph 40 in EP 1,641,048. Applicants teach taught europium complexes 1, 2, 4, 7 and 9 have the claimed properties in examples 1 and 5-8 in the specification. The taught phosphor is dispersed in a resin. The references teach the device can contain inorganic blue and green phosphors so that the resulting device emits white light. The references teach the claimed device, phosphor and resin composition.

Claim 8 is rejected under 35 U.S.C. 102(a) as being anticipated by JP 2004-356358 or JP 2004-352928.

Applicants admitted EP 1,641,048 is the English equivalent to JP 2004-352928 and thus EP 1,641,048 is being used as the translation for JP 2004-352928.

As discussed above, this reference teaches the claimed device and it also teaches an ultraviolet treatment is performed on the device so as to prevent the phosphor from being irradiated with ultraviolet range of 350 nm or less. The reference teaches the claimed device.

Claims 1-7, 9, 12, 14 and 15 are rejected under 35 U.S.C. 102(a) as being anticipated by U.S. patent application publication 2004/0251809.

Claims 1-7, 9, 10 and 12-15 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 7,189,340.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.



Art Unit: 1793

U.S. patent application publication 2004/0251809 issued as U.S. patent 7,189,340.

Example 8 in both references teach a white light emitting device comprising an LED which emits a wavelength of 460 nm, a yellow emitting inorganic phosphor and  $\text{Eu}(\text{TTA})_3(\text{TPPO})_2$ , which applicants teach has the claimed properties in example 1 in the specification, where the phosphors are dispersed in a resin. The references teach that this device can be used in lighting systems or in image display units. The references teach that the LED can be a GaN based LED. The references teach the claimed device, phosphor and resin composition.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,084,250..

U.S. patent 6,084,250 teaches a white light emitting device used in lighting systems comprising a solid state red phosphor, an inorganic green phosphor, an inorganic blue phosphor and a UV LED which has a peak emission in the range of 300-370 nm, such as a GaN based one. This peak emission overlaps the claimed LED peak emission range. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Also see MPEP 2144.05. The reference teaches the phosphors are dispersed in a resin. Column 3, line 51 through column 4, line 5 teaches that the red phosphor is a fluorescent complex of the general

Art Unit: 1793

formula  $\text{Eu}^{3+}(\text{diketone})_3\text{X}$ , where X can be Phen or DPPhen and the diketone can be tffa (TTA), DPM or tfnb (2NFA). Applicants show these complexes have the claimed properties in the examples in the specification. The reference suggests the claimed device, phosphor and resin.

U.S. patent application publication 2006/0132011 is cited as of interest since while the body of the reference teaches the claimed device, phosphor and resin; the claims do not teach or suggest the device, phosphor and resin and its effective date is after the effective filing date of this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/  
October 10, 2008

/C. Melissa Koslow/  
Primary Examiner  
Art Unit 1793